Docket No.: 05899-00013-US
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Lothar Eggeling et al.

Application No.: 09/914,006 Confirmation No.: 7184

Filed: January 7, 2002 Art Unit: 1652

For: METHOD FOR MICROBIALLY PRODUCING L-VALINE Examiner: C. L. Fronda

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under § 41.37(a), this brief is filed in furtherance of the Notice of Appeal filed in this case on August 25, 2008, and the Notice of Panel Decision from Pre-Appeal Brief Review mailed on October 20, 2008 (setting a new and extendable one-month date for submission of Appellants' Brief on Appeal). This Appeal Brief is timely filed on Monday, December 22, 2008 with a petition for one month extension of time. The original due date was Saturday, December 20, 2008. Monday, December 22, 2008 is the next succeeding day the U.S. Patent and Trademark Office is open for business.

The fees required under § 41.20(b)(2) are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.2:

I. Real Party In Interest
II Related Appeals and Interferences
III. Status of Claims
IV Status of Amendments

V.	Summary of Claimed Subject Matter
VI.	Grounds of Rejection to be Reviewed on Appeal
VII.	Argument
VIII.	Claims
Appendix A	Claims
Appendix B	Evidence
Appendix C	Related Proceedings

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is Forschungszentrum Jülich GmbH. Application Serial No. 09/914,006 was assigned to Forschungszentrum Jülich GmbH on November 14, 2001, and the assignment was recorded with the U.S. Patent and Trademark Office on September 25, 2002 at Reel 013320 and Frame No. 0225.

II. RELATED APPEALS AND INTERFERENCES

The undersigned is not aware of any related appeals or interferences involving this application.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 23 claims pending in application.

B. Current Status of Claims

1. Claims canceled: 1-13, 19, 27-28, 38 and 39
2. Claims withdrawn from consideration but not canceled: none
3. Claims pending: 14-18, 20-26, 29-37 and 40-41
4. Claims allowed: none
5. Claims rejected: 14-18, 20-26, 29-37 and 40-41

C. Claims On Appeal

The claims on appeal are claims 14-18, 20-26, 29-37 and 40-41, which are attached in Appendix A.

IV. STATUS OF AMENDMENTS

On June 25, 2008, Applicants filed a response to the Office Action mailed March 25, 2008. The Response did not contain any amendments to the application. In an Advisory Action dated August 7, 2008, the Examiner indicated that the Response did not place the application into condition for allowance.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claims of the present application are directed to transformed microorganisms and methods of producing the amino acid L-valine. The application has three independent claims, claims 14, 18 and 30. The subject matter of these claims and the support therefor is provided below:

14. A microorganism transformed with a nucleotide sequence encoding dihydroxy acid dehydratase (ilvD) **[see the specification at page 8, lines 3-4 and 9-10]**, nucleotide sequences encoding acetohydroxy acid synthase and isomeroreductase (ilvBNC) or both ilvD and ilvBNC **[see the specification at page 8, lines 9-21]**, in which microorganism the activity of one or more enzymes that are specifically involved in the synthesis of D-pantothenate is reduced or eliminated **[see specification at page 9, lines 4-13]**,

wherein said one or more enzymes are selected from the group consisting of ketopantoate hydroxymethyl transferase (panB), pantothenate ligase (panC), ketopantoic acid reductase (panE) and aspartate decarboxylase (panD) **[see the specification at page 9, lines 23-27]** and said activity of said one or more enzymes is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said enzyme in said microorganism **[see specification at page 9, lines 23-27]** and

wherein said microorganism is a *Corynebacterium* species **[see specification at page 6, lines 11-21]** and said nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD **[see specification at page 8, lines 3-4 and SEQ ID NO: 1]**.

18. A method for the production of L-valine comprising the step of culturing a microorganism transformed with a nucleotide sequence encoding dihydroxy acid dehydratase (ilvD) **[see specification at page 8, lines 3-4 and 9-10]** and nucleotide sequences encoding

acetohydroxy acid synthase and isomeroreductase (ilvBNC) **[see specification at page 8, lines 9-21]**, under conditions wherein said microorganism produces L-valine, wherein said microorganism is a *Corynebacterium* species **[see specification at page 6, lines 11-21]** and said nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD **[see specification at page 8, lines 3-4 and SEQ ID NO: 1]**.

30. A method for the production of L-valine comprising the step of culturing a microorganism in which the activity of dihydroxy acid dehydratase (ilvD) is increased by increased expression of the ilvD nucleotide sequence encoding ilvD **[see specification at page 4, lines 27-29, page 5, lines 3-8 and 20]**, under conditions wherein said microorganism produces L-valine, wherein said microorganism is a *Corynebacterium* species **[see specification at page 6, lines 11-21]** and said nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD **[see specification at page 8, lines 3-4 and SEQ ID NO: 1]**.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Is the Examiner's rejection of claims 14-18, 20-26, 29-37, 40, and 41 on the ground of nonstatutory obviousness-type double patenting in view of claims 1-25 of U.S. Patent 6,177,264 correct?

VII. ARGUMENT

Claims 14-18, 20-26, 29-37, 40 and 41 are patentably distinct from claims 1-25 of U.S. Patent 6,177,264

At page 2 of the Office Action mailed March 25, 2008, the Examiner maintained the rejection of claims 14-18, 20-26, 29-37, 40, and 41 on the ground of nonstatutory obviousness-type double patenting over claims 1-25 of U.S. patent No. 6,177,264 (the '264 patent). The Examiner alleged that, although the instant claims and the patented claims are not identical, they are not patentably distinct from the claims of the '264 patent because the claimed transformed microorganism and claimed methods for production of L-valine of the present application are obvious variations over the patent claims to the isolated polynucleotides from *Corynebacterium*

encoding panB, panC, and ilvBNCD and methods using microorganisms comprising such polynucleotides.

In his remarks, the Examiner alleged that Examples 1-8 of the '264 patent provide support for the patent claims and disclose cloning and expression of panB, panC, ilvBN, ilvC and ilvD genes, construction of inactivated panC and ilvA mutations, and culturing of *Corynebacterium* strains having these mutations. The Examiner referred to column 7, line 5 to column 14, line 26 of the '264 patent, which corresponds to Examples 1-8. The Examiner also pointed out that SEQ ID NO: 1 of the present application and SEQ ID NO: 4 of the '264 patent show 100 % sequence identity. The Examiner cited *In re Vogel*, 164 USPQ 619 (CCPA 1970) to justify the use of the specification to determine whether a claim in the instant application defines an obvious variation of an invention claimed in the '264 patent. The Examiner concluded that the disclosures of the '264 patent support claims 1-25 for the isolated polynucleotides from *Corynebacterium* encoding panB, panC, ilvD and ilvBNCD, and could therefore be used to reject claims 14-18, 20-26, 29-37, 40 and 41.

In determining whether a nonstatutory basis exists for a double patenting rejection, the claims of the application and the claims of the patent are compared to determine whether the claims of the application are merely an obvious variation of an invention claimed in the patent. Moreover, when considering whether the invention defined in a claim of an application would have been an obvious variation of the invention defined in the claim of a patent, the disclosure of the patent may not be used as prior art. *General Foods Corp. v. Studiengesellschaft Kohle GmbH*, 972 F.2d 1272, 1279, 23 USPQ2d 1839, 1846 (Fed. Cir. 1992). According to *In re Vogel*, the prohibition on using the disclosure of the patent as prior art does not mean it may not be used at all. In certain circumstances it may used as a dictionary to learn the meaning of terms in a claim. It may also be used as required to answer the question of what is or is not an obvious variation of a claim. On this point *In re Vogel* states:

> We recognize that it is most difficult, if not meaningless, to try to say what is or is not an obvious variation of a claim. A claim is a group of words defining only the boundary of the patent monopoly. It may not describe any physical thing and indeed may encompass physical things not yet dreamed of. How can it be obvious or not obvious to modify a legal boundary? The disclosure, however, sets forth at least one tangible

> embodiment within the claim, and it is less difficult and more meaningful to judge whether that thing has been modified in an obvious manner. It must be noted that this use of the disclosure is not in contravention of the cases forbidding its use as prior art, nor is it applying the patent as a reference under 35 U.S.C. 103, since only the disclosure of the invention claimed in the patent may be examined. *Id.*, at 622.

In re Vogel allows the comparison of a tangible embodiment of the claimed invention disclosed in the patent to be compared to the claims of the application to judge whether the thing has been modified in an obvious manner. *In re Vogel* does not sanction the wholesale use of the disclosure of the patent under the guise that it pertains to the claimed invention. Such an interpretation would render meaningless the prohibition on using the disclosure of the patent as prior art in determining double patenting, as most of the disclosure in a patent pertains to the claimed invention in some manner.

Claims 14-17 and 41 of the present application are directed to a microorganism transformed with a nucleotide sequence encoding dihydroxy acid dehydratase (ilvD), nucleotide sequences encoding acetohydroxy acid synthase and isomeroreductase (ilvBNC) or both ilvD and ilvBNC, in which microorganism the activity of one or more enzymes that are specifically involved in the synthesis of D-pantothenate is reduced or eliminated, wherein the one or more enzymes are selected from the group consisting of ketopantoate hydroxymethyl transferase (panB), pantothenate ligase (panC), ketopantoic acid reductase (panE) and aspartate decarboxylase (panD), and the activity of the one or more enzymes is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding the enzyme in the microorganism, and wherein the microorganism is a *Corynebacterium* species and the nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD.

Claim 18, and dependent claims 20-26, and 29 are directed to methods for the production of L-valine comprising the step of culturing a microorganism transformed with a nucleotide sequence encoding dihydroxy acid dehydratase (ilvD) and nucleotide sequences encoding acetohydroxy acid synthase and isomeroreductase (ilvBNC), under conditions wherein the

microorganism produces L-valine, wherein the microorganism is a *Corynebacterium* species and the nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD.

Claim 30 and dependent claims 31-37 and 40 are directed to methods for the production of L-valine comprising the step of culturing a microorganism in which the activity of dihydroxy acid dehydratase (ilvD) is increased by increased expression of the ilvD nucleotide sequence encoding ilvD, under conditions wherein said microorganism produces L-valine, wherein the microorganism is a *Corynebacterium* species and the nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD.

In contrast to the claims of the instant application, the claims of the '264 patent are directed to polynucleotide sequences encoding pan B or panC, vectors and microorganisms containing the nucleotide sequences, and methods for producing pantothenic acid.

Claims 1-11 of the '264 patent are directed to isolated polynucleotides from *Corynebacterium* encoding the panB gene product or panC gene product, or both, vectors comprising the polynucleotides, and microorganisms comprising the vectors. There appears to be an error in claim 1 relating to the sequence identifiers for ketopantoate hydroxymethyl-transferase (panB) and pantothenate synthase (panC). Example 1, at column 7, lines 59-66 indicates that the nucleotide sequences encoding panB and panC are found in SEQ ID NO: 1. SEQ ID NO: 1 contains an open reading frame 813 base pairs in length, identified as panB, which codes for a polypeptide of 271 amino acids and is set out in SEQ ID NO: 2. The second open reading frame in SEQ ID NO: 1, identified as panC, comprises 837 base pairs, and codes for a polypeptide of 279 amino acids, which is described as SEQ ID NO: 3. SEQ ID NO: 4 refers to the nucleotide sequence of dihydroxy acid dehydratase (ilvD), as indicated at column 9, lines 63-64 of the '264 patent.

Claim 9 is directed to the vector of claim 7 that is the shuttle vector pECM3ilvBNCD, shown in figure 3. Claim 7 is turn directed to a vector comprising the isolated polynucleotide of claim 6. Claim 6 is directed to an isolated polynucleotide that encodes panB or panC. Applicants construed claim 9 to mean the vector pECM3ilvBNCD containing a polynucleotide sequence encoding panB or panC, as this construction gives meaning to all limitations of the claim.

Claims 12-20, 24 and 25 (in part) of the '264 patent are directed to methods for producing pantothenic acid. Independent claim 12 requires the steps of transforming a vector comprising a panB gene and a panC gene into a microorganism, growing the recombinant microorganism under conditions suitable for production of pantothenic acid in an appropriate culture medium and recovering pantothenic acid from the culture medium. Claims 13-20, 24 and 25 (in part) depend from claim 12.

Claims 21-23 of the '264 patent are also directed to methods of producing pantothenic acid. Claims 21 and 22 require inserting a expression cassettes upstream from the panB and panC genes, or pan B, panC and ilvD genes, respectively, in *Corynebacterium*. Claim 23 requires the step of increasing the stability of the mRNA which is translated from the panB and panC genes and/or the step of preventing the degradation of the panB and panC gene products.

The Examiner correctly found that the claims of the '264 patent are not identical to the appealed claims. However, instead of determining whether the claims of the present application are obvious variations of the claims of the '264 patent, the Examiner erred by then comparing the appealed claims with the disclosures of the '264 patent. The Examiner justified the comparison under the guise that Examples 1-8 support the claims and, in accordance with *In re Vogel*, can be used to determine whether the appealed claims are an obvious variation of the claims in the '264 patent.

In re Vogel sanctions the use of the disclosures of a patent to determine what is an obvious variation of a claim; the disclosure that can be used is a tangible embodiment of the invention within the claim. Several examples in the '264 patent disclose embodiments of the invention, but others do not. Example 1, to the extent represented by the actual sequences of SEQ ID NO: 2 and SEQ ID NO: 3 shown in the Sequence Listing, appears to disclose an embodiment of claims 1-8 and 10. Example 4 discloses Corynebacterium strains ATCC13032/ pEKEx2panBC and ATCC13032ΔilvA/pEKEx2panBC that appear to be embodiments of claims 10 and 11.

Examples 7 and 8 in conjunction with Example 4 arguably appear to disclose embodiments of claim 12, except that the step of recovering the pantothenate from the culture medium is not explicitly disclosed. Example 7 in conjunction with Example 4 discloses

preparation of the transformed *C. glutamicum* strains ATCC13032/ pEKEx2panBC and ATCC13032ΔilvA/pEKEx2panBC, and culturing of the cells in medium to produce pantothenate. Example 8 in conjunction with Example 4 discloses the preparation of the transformed *C. glutamicum* strain ATCC13032ΔilvA/ pECM3ilvBNCD pEKEx2panBC, and culturing of the cells in medium with added β-alanine to produce pantothenate.

Examples 2, 3, 5 and 6, relating to cloning and sequencing of the ilvD gene, construction of an ilvA deletion mutant from *C. glutamicum*, construction of a panC mutant of *C. glutamicum* and use for quantitative determination of D-pantothenate, do not appear to disclose any embodiments of the inventions claimed in claims 1-25.

The portion of Examples 1-8 that can be used in the double patenting analysis is thus limited to the aforementioned disclosures in Examples 1 and 4 of specific embodiments falling within the scope of the claims of the '264 patent, and, possibly Examples 7 and 8. Although the examples of the '264 patent disclose materials such as the ilvD, ilvBN, and ilvC genes, an ilvA deletion mutant of *C. glutamicum* and an inactivated panC mutant of *C. glutamicum*, they are not claimed nor do they represent tangible embodiments of the claimed invention. The remaining portions of Examples 1, 4, 7 and 8, and Examples 2, 3, 5 and 6 therefore cannot be used in the double patenting analysis because to do so would be impermissibly using them as prior art against the present claims.

There is no way the Examiner could have found the claimed invention to be an obvious variation of the claims of the '264 patent except by impermissibly treating the '264 patent as though it were prior art. In effect, what the Examiner did was to use disclosures of unclaimed materials and microorganisms in the examples of the '264 patent to reject the microorganisms and methods of claims 14-18, 20-26, 29-37, 40 and 41 as merely obvious variations of the claims of the '264 patent.

When the correct standard is applied, it is readily apparent that the appealed claims are not obvious variants of claims 1-25 of the '264 patent.

The microorganisms of claims 14-17 and 41 are not obvious variations of the microorganisms of claims 10 and 11 of the '264 patent. The microorganisms of claims 14-17

and 41 of the present application do not comprise a vector comprising a polynucleotide encoding panB or panC. There is no component or structure of the microorganisms of claims 14-17 and 41 that could possibly be considered a vector comprising a polynucleotide encoding panB or panC. Thus, claims 14-17 and 41 of the present invention are not obvious variations of claims 10 and 11 of the '264 patent. (The transformed microorganisms used in the methods of claims 12-20, 24 and 25 of the '264 patent also require transformation with a vector comprising a nucleotide sequence encoding panB and panC.)

Claims 18, 20-26, 29-37 and 40 of the present application are directed to methods of producing L-valine. Claims 12-25 of the '264 patent, however, are directed to methods for producing pantothenate, a different substance. Pantothenate and L-valine have very different structures, and methods of preparing one could not in any way be considered the equivalent or suggestive of the other. None of the steps of appealed claims 18, 20-26, 29-37 and 40 are obvious variations of the steps of claims 12-25 of the '264 patent. The methods of claim 12 of the '264 patent, and claims 13-20, 24 and 25 (in part) which depend from claim 12, require transforming a vector into a microorganism to produce a recombinant microorganism, wherein the vector comprises the panB gene and a panC gene. The methods of claims 18, 20-26, 29-37 and 40 of the present application do not contain a step of transforming a vector comprising a panB gene and a panC gene into a microorganism to produce a recombinant microorganism, or a variation of such a step.

Step b) of claim 12 of the '264 patent requires growing of the recombinant microorganism under conditions suitable for the production of pantothenic acid. Claims 18, 20-26, 29-37 and 40 of the present application do not contain this step or a variation of the step. In the methods of claims 18, 20-26, 29-37 and 40 of the present application, the microorganism recited in the claim is cultured under conditions wherein the microorganism produces L-valine.

The methods of claims 12-25 of the '264 patent require the step of recovering pantothenic acid from the culture medium. A step of recovering pantothenic acid, or variation of this step is not found in the methods of claims 18, 20-26, 29-37 and 40 of the present application. With regard to claims 21-23 of the '264 patent, the methods of claims 18, 20-26, 29-37 and 40 of the present application do not require any of the recited steps, or a variation of the steps.

When claims 14-18, 20-26, 29-37, 40, and 41 of the present application are compared with the claims of the '264 patent, it is clear that claims 14-18, 20-26, 29-37, 40, and 41 are not identical to or obvious variations of claims 1-25 of the '264 patent. Claims 14-18, 20-26, 29-37, 40, and 41 are patentably distinct from claims 1-25 of the '264 patent.

In view of the above remarks, it is respectfully submitted that the Examiner erred in the rejection of claims 14-18, 20-26, 29-37, 40, and 41 on the ground of nonstatutory obviousness-type double patenting. Accordingly, it is respectfully requested that the Board reverse the Examiner's rejection and allow the rejected claims.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 03-2775, under Order No. 05899-00013-US.

Dated: December 22, 2008

Respectfully submitted,

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/914,006

14. A microorganism transformed with a nucleotide sequence encoding dihydroxy acid dehydratase (ilvD), nucleotide sequences encoding acetohydroxy acid synthase and isomeroreductase (ilvBNC) or both ilvD and ilvBNC, in which microorganism the activity of one or more enzymes that are specifically involved in the synthesis of D-pantothenate is reduced or eliminated,

wherein said one or more enzymes are selected from the group consisting of ketopantoate hydroxymethyl transferase (panB), pantothenate ligase (panC), ketopantoic acid reductase (panE) and aspartate decarboxylase (panD) and said activity of said one or more enzymes is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said enzyme in said microorganism and

wherein said microorganism is a *Corynebacterium* species and said nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD.

15. The transformed microorganism according to Claim 14 in which the activity of the enzyme ketopantoate hydroxymethyl transferase (panB), the enzyme pantothenate ligase (panC) or both panB and panC is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said enzyme in said microorganism.

16. The transformed microorganism according to Claim 14 in which the activity of the enzyme threonine dehydratase (ilvA) is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said ilvA in said microorganism.

17. The transformed microorganism according to Claim 14 wherein said microorganism is *Corynebacterium glutamicum*.

18. A method for the production of L-valine comprising the step of culturing a microorganism transformed with a nucleotide sequence encoding dihydroxy acid dehydratase

(ilvD) and nucleotide sequences encoding acetohydroxy acid synthase and isomeroreductase (ilvBNC), under conditions wherein said microorganism produces L-valine, wherein said microorganism is a *Corynebacterium* species and said nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD.

20. The method of claim 18 wherein the activity of threonine dehydratase (ilvA) in said microorganism is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said ilvA in said microorganism.

21. The method of claim 18 wherein the activity of at least one enzyme in said microorganism selected from the group consisting of ketopantoate hydroxymethyl transferase (panB), pantothenate ligase (panC), ketopantoic acid reductase (panE) and aspartate decarboxylase (panD) is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said enzyme in said microorganism.

22. The method of claim 21 wherein said at least one enzyme is panB or panC.

23. The method of claim 22 wherein said at least one enzyme is panB and panC.

24. The method of claim 20 wherein the activity of at least one enzyme in said microorganism selected from the group consisting of ketopantoate hydroxymethyl transferase (panB), pantothenate ligase (panC), ketopantoic acid reductase (panE) and aspartate decarboxylase (panD) is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said enzyme in said microorganism.

25. The method of claim 24 wherein said at least one enzyme is panB or panC.

26. The method of claim 25 wherein said at least one enzyme is panB and panC.

29. The method of claim 18 wherein said *Corynebacterium* species is *Corynebacterium glutamicum*.

30. A method for the production of L-valine comprising the step of culturing a microorganism in which the activity of dihydroxy acid dehydratase (ilvD) is increased by increased expression of the ilvD nucleotide sequence encoding ilvD, under conditions wherein said microorganism produces L-valine, wherein said microorganism is a *Corynebacterium* species and said nucleotide sequence encoding ilvD comprises the portion of SEQ ID NO: 1 encoding ilvD.

31. The method of claim 30 wherein the acetohydroxy acid synthase and isomeroreductase (ilvBNC) activity of said microorganism is increased as a result of mutation of the endogenous gene encoding said ilvBN or ilvC or both.

32. The method of claim 30 wherein said microorganism is transformed with a nucleotide sequence encoding acetohydroxy acid synthase and isomeroreductase (ilvBNC).

33. The method of claim 30 wherein the activity of threonine dehydratase (ilvA) in said microorganism is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said ilvA in said microorganism.

34. The method of claim 31 wherein the activity of threonine dehydratase (ilvA) in said microorganism is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said ilvA in said microorganism.

35. The method of claim 34 wherein the activity of at least one enzyme in said microorganism selected from the group consisting of ketopantoate hydroxymethyl transferase (panB), pantothenate ligase (panC), ketopantoic acid reductase (panE) and aspartate decarboxylase (panD) is reduced or eliminated as a result of deletion of all or a part of the nucleotide sequence encoding said enzyme in said microorganism.

36. The method of claim 35 wherein said at least one enzyme is panB or panC.

37. The method of claim 36 wherein said at least one enzyme is panB and panC.

40. The method of claim 30 wherein said *Corynebacterium* species is *Corynebacterium glutamicum*.

41. The microorganism of claim 14, wherein said microorganism is transformed with a nucleotide sequence encoding ilvD or nucleotide sequences encoding both ilvD and ilvBNC.

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APPENDIX B

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the examiner is being submitted.

APPENDIX C

No related proceedings are referenced in II. above, hence copies of decisions in related proceedings are not provided.

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2009 *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)*	Docket Number (Optional) 05899-00013-US
Application Number 09/914,006-Conf. #7184	Filed January 7, 2002
For METHOD FOR MICROBIALLY PRODUCING L-VALINE	
Art Unit 1652	Examiner C. L. Fronda

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
[x]	One month (37 CFR 1.17(a)(1))	$130	$65	$ 130.00
[ ]	Two months (37 CFR 1.17(a)(2))	$490	$245	$
[ ]	Three months (37 CFR 1.17(a)(3))	$1110	$555	$
[ ]	Four months (37 CFR 1.17(a)(4))	$1730	$865	$
[ ]	Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

[ ] Applicant claims small entity status. See 37 CFR 1.27.

[ ] A check in the amount of the fee is enclosed.

[ ] Payment by credit card. Form PTO-2038 is attached.

[x] The Director has already been authorized to charge fees in this application to a Deposit Account.

[x] The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 03-2775 .

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

[ ] applicant/inventor.

[ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

[x] attorney or agent of record. Registration Number 33,712

[ ] attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

Liza D. Hohenschutz — Signature — December 22, 2008 — Date

Liza D. Hohenschutz — Typed or printed name — (302) 658-9141 — Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

[ ] Total of 1 forms are submitted.

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2009

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 670.00

Complete if Known	
Application Number	09/914,006-Conf. #7184
Filing Date	January 7, 2002
First Named Inventor	Lothar Eggeling
Examiner Name	C. L. Fronda
Art Unit	1652
Attorney Docket No.	05899-00013-US

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 03-2775 Deposit Account Name: Connolly Bove Lodge & Hutz LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
Application Type	Fee ($)	Small Entity Fee ($)	Fee ($)	Small Entity Fee ($)	Fee ($)	Small Entity Fee ($)	Fees Paid ($)
Utility	330	165	540	270	220	110	
Design	220	110	100	50	140	70	
Plant	220	110	330	165	170	85	
Reissue	330	165	540	270	650	325	
Provisional	220	110	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	52	26
Each independent claim over 3 (including Reissues)	220	110
Multiple dependent claims	390	195

Total Claims _____ - 20 or HP = _____ x Fee ($) _____ = Fee Paid ($) _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims _____ - 3 or HP = _____ x Fee ($) _____ = Fee Paid ($) _____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims: Fee ($) _____ Fee Paid ($) _____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets _____ - 100 = Extra Sheets _____ /50 = Number of each additional 50 or fraction thereof _____ (round up to a whole number) x Fee ($) _____ = Fee Paid ($) _____

4. OTHER FEE(S) Fee Paid ($)

Non-English Specification, $130 fee (no small entity discount)

Other (e.g., late filing surcharge): 1251 Extension for response within first month 130.00

1402 Filing a brief in support of an appeal 540.00

SUBMITTED BY					
Signature	Liza D. Hohenschutz	Registration No. (Attorney/Agent)	33,712	Telephone	(302) 658-9141
Name (Print/Type)	Liza D. Hohenschutz			Date	December 22, 2008

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Application No. (if known): 09/914,006 Attorney Docket No.: 05899-00013-US

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Appeal Brief (17 pages)
One Month Request for Extension of Time Under 37 CFR 1.136(a) (1 page)
Appeal Brief Transmittal (1 page)
Fee Transmittal (1 page)
Charge $670.00 to deposit account 03-2775
Fax Transmission Cover Sheet (1 page)